

## Updates in Pediatric Urology

*Highlights from the American Academy of Pediatrics Section on Urology Annual Meeting, October 31-November 3, 2003, New Orleans, LA*

[*Rev Urol.* 2004;6(2):86-88]

© 2004 MedReviews, LLC

---

**Key words:** Analgesia • Bupivacaine • Cystometrograms • Joint hypermobility • Pediatrics • Pelvic floor dysfunction

---

The American Academy of Pediatrics Section on Urology Annual Meeting was held in New Orleans, October 31-November 3, 2003. One hundred and twenty papers and posters were presented on a wide range of topics, including cryptorchidism, genitourinary tumors, varicocele, exstrophy, sexual differentiation, reflux, hypospadias, neurogenic bladder, hydronephrosis, valves, and voiding dysfunction. Barry O'Donnell, MD, was awarded the Pediatric Urology Medal. He received accolades for his many contributions

to pediatric urology, including his pioneering work with endoscopic therapies for the treatment of vesicoureteral reflux. The meeting was well attended by pediatric urologists from North America, South America, and Europe. Three clinical research abstracts are highlighted below.

### **Infusion Solution for Urodynamic Studies: Room Temperature Versus Body Temperature**

The first prize for clinical research was awarded to Chin-Peuckert and colleagues,<sup>1</sup> from Montreal, who conducted a prospective randomized study comparing consecutive cystometrograms (CMGs) performed using

room temperature (RT) or body temperature (BT) saline in the same child. The investigators performed identical CMGs using varied saline temperature in random order. They evaluated various urodynamic parameters, including bladder capacity, uninhibited detrusor contractions, detrusor leak point pressure, maximum flow rate, pressure at maximum flow, maximum voiding pressure, residual urine, and pressure-specific volumes at less than 20 cm H<sub>2</sub>O, 30 cm H<sub>2</sub>O, and 40 cm H<sub>2</sub>O.

The study group consisted of 91 children with a mean age of 8.6 years (range, 1 month to 26 years). More than half (64%) of the subjects had spinal dysraphism, 9% had cere-

---

Reviewed by Ellen Shapiro, MD, FACS, FAAP, Department of Urology, New York University School of Medicine, New York, NY

bral palsy, 6% had posterior urethral valves, and 21% had daytime incontinence or frequency/urgency. RT CMG was performed first in 44 children; BT CMG was performed first in 47 children.

The maximum bladder capacity, pressure bladder capacity, and pressure-specific volumes at below 20 cm H<sub>2</sub>O, 30 cm H<sub>2</sub>O, and 40 cm H<sub>2</sub>O were lower during BT CMG. During BT saline infusion, maximum flow rate was higher. There were no statistical differences between groups for the remainder of the parameters. Detrusor

### Pelvic Floor Dysfunction and Generalized Hypermobility of Joints

De Jong and colleagues,<sup>2</sup> from Utrecht, The Netherlands, examined the relationship of generalized hypermobility of joints and symptoms of non-neurogenic bladder sphincter dysfunction in children. Fifteen percent of children have joint hypermobility. Parents of 200 children with joint hypermobility and 300 healthy school children, aged 5 to 12 years, were given the questionnaire to review their children's voiding and bowel habits. Age-matched

than in the normal female control subjects (11%).

The authors concluded that children with generalized hypermobile joints have a higher incidence of symptoms of non-neurogenic bladder sphincter dysfunction. Boys with this condition more commonly have constipation, whereas girls have a higher incidence of incontinence and infection.

### Continuous Epidural Versus Single-Dose Caudal Analgesia Using Bupivacaine Following Intravesical Ureteral Reimplantation

Merguerian and colleagues<sup>3</sup> compared the effects of caudal injection versus continuous epidural infusion of bupivacaine on controlling pain following intravesical ureteral reimplantation. Thirty-four children aged 16 to 18 years were randomized prospectively to receive either a caudal injection of 0.25% bupivacaine preoperatively or 0.25% epidural bupivacaine followed by continuous infusion of 0.125% bupivacaine at a rate of 0.4 mL/kg/h. The caudal injection was performed before the start of the operation. The subjects also received patient-controlled analgesia (PCA), ketorolac and oxybutynin (Ditropan<sup>®</sup>; Ortho-McNeil Pharmaceutical, Inc, Raritan, NJ). Pain scores were determined from a pain scale and the number of supplemental morphine requirements.

Opioid-related and local anesthetic-

*Constipation was identified in 19% of the hypermobile boys, compared with 4% of the male control subjects.*

instability was more frequent during RT CMGs. Discrepancies in the 2 CMGs were more commonly found in children with spinal dysraphism and those with large bladders.

The authors concluded that, although there were statistically significant differences between an individual's CMG results performed with BT or RT (bladder capacity, instability, and pressure-specific volumes were decreased during BT CMGs), the magnitude of these difference was not clinically relevant. The authors further concluded that it is unnecessary to use a warm infusion of saline during pediatric urodynamic studies.

questionnaires of hypermobile children (n = 91) were compared with those of 117 control subjects.

Constipation was identified in 19% of the hypermobile boys, compared with 4% of the male control subjects. Fecal soiling was present in 34% of the hypermobile subjects, compared with 18% of control subjects. Daytime urinary incontinence and nocturnal enuresis were more common in the hypermobile female group, occurring in 38% of these children, whereas only 14% of female control subjects had these symptoms. Urinary tract infection was also more common (24%) among the hypermobile girls

### Main Points

- In a prospective randomized study, Chin-Peuckert and colleagues concluded that differences between results of cystometrograms performed using room temperature or body temperature saline are not clinically significant and, therefore, it is unnecessary to use a warm infusion of saline during pediatric urodynamic studies.
- De Jong and colleagues demonstrated that generalized hypermobility of joints in children is associated with a higher incidence of symptoms of non-neurogenic bladder sphincter dysfunction. Boys with this condition more commonly have constipation, whereas girls have a higher incidence of incontinence and infection.
- Merguerian and colleagues demonstrated that, although both epidural anesthesia and a single-dose caudal analgesia using bupivacaine provide satisfactory pain control following intravesical ureteral reimplantation, epidural anesthesia permits earlier tolerance of a regular diet and decreases the need for additional morphine.

related side effects, as well as time to tolerating a regular diet, were also examined; there were no significant differences in these parameters between the 2 groups. Significantly more patients in the caudal group required morphine in the recovery room compared with the epidural group (73% and 8.3%, respectively). Subjects in the caudal group also had a higher PCA demand. Patients in the epidural group tolerated a regular diet by 13 hours, compared with 26 hours for those in the caudal group.

The investigators concluded that both epidural anesthesia and a single-shot caudal analgesia using bupivacaine provide satisfactory pain control following intravesical ureteral reimplantation. A continuous epidural permits earlier tolerance of a regular diet and decreases the need for additional morphine. These factors may lead to earlier discharge from the hospital. ■

#### References

1. Chin-Peuckert L, Rennick JE, Jednak R, et al. Should warm infusion solution be used for urodynamic studies in children? A prospective randomized study. Presented at: Annual Meeting of the American Academy of Pediatrics Section on Urology; October 31-November 3, 2003; New Orleans, La. Podium 27.
2. de Jong TPVM, Engelbert RHH, de Kort LMO, et al. Pelvic floor dysfunction and generalized hyperlaxity of joints in children. Presented at: Annual Meeting of the American Academy of Pediatrics Section on Urology; October 31-November 3, 2003; New Orleans, La. Podium 16.
3. Merguerian PA, Chang B, Sutters K, et al. Prospective randomized study evaluating the efficacy of continuous epidural versus single-dose caudal analgesia using bupivacaine following intravesical ureteroneocystostomy. Presented at: Annual Meeting of the American Academy of Pediatrics Section on Urology; October 31-November 3, 2003; New Orleans, La. Podium 21.